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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,422	07/02/2003	Lucy M. Bull	005950-790	5145

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BUCHANAN, INGERSOLL & ROONEY PC
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EXAMINER	
DOUGLAS, JOHN CHRISTOPHER	
ART UNIT	**PAPER NUMBER**
1764	

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/613,422	BULL ET AL.	
	Examiner	Art Unit	
	John C. Douglas	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *3,4,23 and 24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-22 and 25-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Examiner acknowledges the response filed on 8/02/2006 containing remarks and amendments to the claims.

2. Examiner acknowledges claim 25 as amended.

3. The rejection is maintained:

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 5-18, 21, 25-27, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain et al. (US 2,877,257) in view of Moore, Jr. et al. (US 2002/0173556 A1).

The Cain reference discloses a process for removing metal contaminants from a Fischer-Tropsch derived hydrocarbon stream. At least a portion of these contaminants would necessarily originate from the processing equipment and catalyst. The process comprises passing the hydrocarbon stream to a treatment zone where the hydrocarbon stream contacts an aqueous acidic stream that is passed to the treatment zone (i.e., extraction column). The acidic stream should have a strength corresponding to concentrations of sulfuric acids ranging from about 1.5 to about 50 weight percent. These concentrations would necessarily be within the claimed ranges. The resulting mixture that includes precipitated solids is then separated to recover an extracted hydrocarbon stream and a modified acidic stream. This modified acidic stream is then separated into an acid stream (28) and another stream (22) that is equivalent to the claimed third phase. These two streams would necessarily contain contaminants with a concentration greater than contained in the hydrocarbon. The acidic stream can comprise an inorganic acid such as sulfuric acid or an organic acid such as acetic acid.

The acidic stream used in the process may also comprise the aqueous phase produced in the F-T process. This produced aqueous phase contains acetic acid. Also, the examples in the Cain reference clearly are batch treatments but it is also clear from Figure 2 that the process can be operated continuously. The extraction step is performed until essentially all the iron is removed from the hydrocarbon stream. This would necessarily disclose the limitations of claim 26. See column 1, lines 15-36; column 2, lines 48-51; column 3, lines 9-35 and 52-75; column 4, lines 1-43; column 7, lines 41-73; column 8, lines 1-24; the examples, and Figure 2.

The Cain reference does not disclose using a cobalt catalyst in the F-T step and does not disclose that aluminum is removed from the hydrocarbon. The Cain reference also does not disclose the extraction conditions of claim 27 and does not disclose passing the acid extracted F-T derived hydrocarbon stream to a hydroprocessing reactor and then hydroprocessing this stream.

The Moore reference discloses that F-T streams are produced in processes that utilize catalysts such as iron or cobalt catalysts. See paragraph [0079]. The Moore reference also discloses that F-T derived streams may be fractionated (i.e., distilled) and hydrotreated. See paragraphs [0047] and [0048].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Cain by using a cobalt catalyst in the F-T step as suggested by Moore because this type of catalyst is effective in producing F-T products and therefore would be expected to be effective in the process of Cain. Regarding the removal of aluminum contamination, such removal would

necessarily occur in the modified process since the same feed as claimed is contacted with the same acid as claimed.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Cain by distilling and hydrotreating the purified hydrocarbon stream as suggested by Moore because a stream with fewer undesired components such as olefins will be produced.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Cain by utilizing the conditions of claim 27 because one would utilize any conditions that result in the removal of contaminants disclosed by Cain.

Claims 19, 20, 22, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain et al. (US 2,877,257) in view of Moore, Jr. et al. (US 2002/0173556 A1) as applied to claims 1, 2, and 5-18 above, and further in view of Zhou (US 6,476,086 B1).

The previously discussed references do not disclose filtering the hydrocarbon stream after the contacting step and do not disclose adding a surfactant to the hydrocarbon stream.

The Zhou reference discloses a process for separating contaminant particles from an F-T derived stream. The process comprises contacting the stream with a composition that comprises a surfactant. The reference also discloses that filtration techniques have been used to separate solid contaminants from F-T derived streams. See column 1, lines 29-40 and 65-67; column 2, lines 1-67; and column 3, lines 1-11.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the teachings of the previously discussed references by filtering the product as suggested by Zhou because filtering will remove any solid contaminants from the product.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the teachings of the previously discussed references by adding a surfactant to the hydrocarbon stream as suggested by Zhou because the addition of a surfactant will enhance the separation process.

Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain et al. (US 2,877,257) in view of Moore, Jr. et al. (US 2002/0173556 A1) and Zhou (US 6,476,086 B1).

As discussed above, the Cain reference does not disclose that the additive is added to the reactor and does not disclose filtering the hydrocarbon stream after the adding step. The reference also does not disclose adding a surfactant to the hydrocarbon stream or passing the F-T derived hydrocarbon stream to a hydroprocessing reactor.

The Moore reference discloses that F-T streams are produced in processes that utilize catalysts such as iron or cobalt catalysts. See paragraph [0079]. The Moore reference also discloses that F-T derived streams may be fractionated (i.e., distilled) and hydrotreated. See paragraphs [0047] and [0048].

The Zhou reference discloses a process for separating contaminant particles from an F-T derived stream. The process comprises contacting the stream with a

composition that comprises a surfactant. The reference also discloses that filtration techniques have been used to separate solid contaminants from F-T derived streams. See column 1, lines 29-40 and 65-67; column 2, lines 1-67; and column 3, lines 1-11.

It would have been obvious to one having ordinary skill in the art to modify the process of Cain by adding the acid to the reactor because the same purification would take place with the added benefit of cost savings due to the reduced equipment requirement.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Cain by filtering the product resulting from the extraction step as suggested by Zhou because filtering will remove any solid contaminants from the product.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Cain by adding a surfactant to the hydrocarbon stream as suggested by Zhou because the addition of a surfactant will enhance the separation process.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Cain by hydrotreating the purified hydrocarbon stream as suggested by Moore because a stream with fewer undesired components such as olefins will be produced.

Response to Arguments

7. Applicant's arguments filed on 8/2/2006 have been fully considered but they are not persuasive.

8. Applicant first argues that there is no suggestion or motivation to combine Cain with Moore. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine Moore is that the cobalt catalyst in the F-T step as suggested by Moore is effective in producing F-T products and therefore would be expected to be effective in the process of Cain.

9. Second, Applicant argues that such a combination results in impermissible hindsight. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a

reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

10. Third, Applicant argues that the oil is neutralized following treatment with the acid solution. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

11. Fourth, Applicant argues that Cain does not disclose or suggest that the combination of primary oil and water solution of acetic acid forms three phases in the Extractor. Cain discloses contacting a hydrocarbon stream with an acidic stream in the extraction zone, which produces an extracted hydrocarbon stream and a modified acidic stream. The modified acidic stream is then separated into an acid stream and another stream equivalent to the claimed third phase. According to *In re Burhans*, 154 F.2d 690 (CCPA 1946), "the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results" (see MPEP 2144.04). In Cain, the separation to achieve the equivalent of the third phase is performed in a step following the extraction step. However, such a distinction is merely a variation in the sequence of performing the process steps. Thus, it is obvious to modify the process of Cain to achieve the separation to obtain the third phase in the extraction step.

12. Fifth, Applicant argues that Cain, Moore, and Zhou, when combined, do not disclose or suggest providing an additive to the contents of the Fischer-Tropsch reactor

to precipitate soluble contamination within the reactor. The Zhou reference discloses a process for separating contaminant particles from an F-T derived stream. The process comprises contacting the stream with a composition that comprises a surfactant. The reference also discloses that filtration techniques have been used to separate solid contaminants from F-T derived streams. Again, According to *In re Burhans*, "the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results" (see MPEP 2144.04). In Zhou, the addition of the surfactant is to a F-T derived stream. The Applicant claims adding the surfactant to the F-T reactor. Thus, such a distinction is merely a variation in the sequence of adding the surfactant. Therefore, it is obvious to modify the process of Zhou to include adding the surfactant to the F-T reactor.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C. Douglas whose telephone number is 571-272-1087. The examiner can normally be reached on 7:30 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCD

10/18/2006